and costs (all p<0.05), the adjusted annual incremental costs in abusers versus non-abusers were $28,882 (95% Confidence Interval [CI]: $28,455-$29,311) and $15,523 (95% CI: $15,389-$15,657) per patient among Medicaid and commercially insured patients, respectively, during the post-index period. The main cost driver was inpatient hospitalization which comprised 88% of unadjusted incremental costs during follow up in Medicaid insured population and 53% in commercial insured population. **CONCLUSIONS:** Diagnosed opioid abusers among long-term IR hydrocodone users impose significantly higher financial burden in both Medicaid and commercially insured populations in terms of all-cause direct health care expenditures, ranging from $28,882 to $15,523 per abuser per year.

**PSY38**

**PREVALENCE-BASED MEASUREMENT OF THE ECONOMIC BURDEN OF RARE DISEASES: CASE REVIEW TO DETERMINE THE ANNUAL COST OF ACROMEGALY IN ITALY**

Premoli E[1], Tasdemir E[2], Magestro M[3], Griner BP[4], Cummins G[5], Van Engen A[6], Kreeftmeijer J[6], Niemira J[4], Tao C[7]

[1]*Novartis Pharma - BU Oncology, Origgio, Italy,* [2]*Novartis Oncology, Origgio / VA, Italy,* [3]*Novartis Pharmaceuticals Corporation, East Hanover, NJ, USA,* [4]*Quintiles, Cambridge, MA, USA,* [5]*Quintiles, Durham, NC, USA,* [6]*Quintiles Consulting, Hoofddorp, The Netherlands,* [7]*Quintiles Consulting, Cambridge, MA, USA*

**OBJECTIVES:** Although acromegaly is acknowledged as requiring resource-intensive treatment, its ultimate economic burden is unclear. As an extension of work presented at ISPOR 2013 International Conference (New Orleans, US), the objective of this research is to measure the annual economic burden of acromegaly in Italy using a case-review methodology with a prevalence-based sample of patients diagnosed with acromegaly. **METHODS:** A case-review method was used with a sample of 22 endocrinologists reviewing 86 patient cases (4 cases per physician) diagnosed with acromegaly. The patient case histories included: resource utilization including office visits and hospitalization, diagnostic procedures and labs, medications prescribed, medical procedures preformed, and an estimate of lost productivity. A micro-costing analysis was conducted to obtain costs in the prior 12 months for each patient case reviewed, using published literature, medical fee schedules, and pharmaceutical cost databases to assign costs to treatments and medical procedures identified in the survey data. Annual costs were examined across a broad range of patients of different ages, gender and time from diagnosis. Two biomarkers were used to categorize acromegaly patients as Controlled vs. Uncontrolled: Insulin Growth Factor-1 (IGF-1) and Growth Hormone (GH). Several patient characteristics were used as control factors when comparing annual economic impact: age, sex, and time from diagnosis. Statistical tests and confidence intervals were calculated to determine the significance of patient characteristic effects on economic burden. **RESULTS:** Three patient subgroups were used to classify uncontrolled acromegaly patients: IGF-1, GH and both IGF-1 and GH. The annual per-patient economic burden of disease costs ranges from € 18,600 to € 38,000 across these groups. These cost ranges are benchmarked to other studies to provide context and validity. **CONCLUSIONS:** The total economic burden acromegaly in Italy is significant. Understanding the factors impacting burden of illness will inform future improvements in treatment practice.

**PSY39**

**COSTS OF ABSENTEEISM IN PSORIATIC AND ENTEROPATHIC ARTHROPATHIES BASED ON REAL-LIFE DATA FROM POLAND'S SOCIAL INSURANCE INSTITUTION DATABASE IN 2012**

Kawalec P, Malinowski K

*Jagiellonian University Medical College, Krakow, Poland*

**OBJECTIVES:** The aim of this study was to assess the indirect costs caused by absenteeism associated with psoriatic and enteropathic arthropathies from the perspective of the Social Insurance Institution (ZUS) in Poland. **METHODS:** The estimates were based on data published by ZUS referring to year 2012 and concerning absence from work due to the illness (sick leave), the amount of short term disability, the sufferers of which claim rehabilitation benefit, and the amount of permanent (or long term) disability, the sufferers of which claim disability pension. Costs were calculated with Human Capital Approach methodology taking into account Gross Domestic Product (GDP) per capita equaled 41 398 PLN; results were presented in Polish zloty (PLN). **RESULTS:** Total indirect costs of psoriatic and enteropathic arthropathies in the year 2012 calculated using GDP per capita in Poland were 9 312 773 PLN. The highest component of indirect costs of psoriatic and enteropathic arthropathies was sick leave (82%). Long and short term disability costs constitute 9% and 8% of total indirect costs of psoriatic and enteropathic arthropathies, respectively. In 2012 Poland's Social Insurance Institution database reported 1 900 patients on sick leave, 54 patients with short term disability and 3 patients with long term disability. Indirect costs per patient associated with sick leave were 4 037 PLN calculated using GDP per capita. Indirect costs per patient associated with short term disability were as high as 16 227 PLN and associated with long term disability were as high as 255 288 PLN. **CONCLUSIONS:** Psoriatic and enteropathic arthropathies in Poland generated high indirect costs. The main component was sick leave; rehabilitation benefit and disability pension generated much lower costs of lost productivity.

**PSY40**

**SOCIAL COSTS OF DIFFERENT PROCEDURES IN BARIATRIC SURGERY IN PATIENTS WITH OBESITY-RELATED COMORBIDITIES**

Bellelli S[1], Armeni P[2], Tarricone R[3], Turchetti G[1]

[1]*Scuola Superiore Sant'Anna, Pisa, Italy,* [2]*Bocconi University, Milano, Italy,* [3]*Bocconi University, Milan, Italy*

**OBJECTIVES:** To estimate the social cost of bariatric surgery techniques in obese patients with hypertension, diabetes mellitus (T2DM) and anxiety-depression disorders (ADD). **METHODS:** A longitudinal multicenter study was conducted by enrolling obese adult patients in charge to 6 Hospital in Italy at time of intervention of gastric banding, gastric by-pass, and sleeve gastrectomy and following up to 1 year. Direct medical costs were estimated using tariffs for laboratory tests, diagnostic exams, visits, and prices for drugs. Procedure and inpatient cost data were collected at Center level. Non medical costs included costs for travel and accommodation, domestic help and informal care. The loss of productivity of patients have been estimated using the human capital approach. The incremental effects of having comorbidities on social costs were estimated by multivariate Generalized Linear Models (log link, Gamma family) adjusting for gender, age, BMI, type of intervention and complications. Costs are expressed in Euro 2013. **RESULTS:** Among 301 patients enrolled, 108 (36%) had hypertension, 53 (18%) T2DM and 47 (16%) ADD. The raw social cost of intervention were €8,749 (± €2,359), €9,511 (± €2,292) and €8,999 (± €2,275) for patients with hypertension, T2DM and ADD. A significant incremental effect of having T2DM was found on social cost of intervention (€751, 95%CI: 242-1,259, p=0.004). 1 year after intervention reductions of 48%, 81% and 15% were observed for hypertension, T2DM and ADD. The raw social annual costs estimated were € 2,461 (± € 1,490) for hypertension, € 2,424 (± € 951) for T2DM and € 3,582 (± € 2,017) for ADD. Direct non medical costs and indirect costs represent the main component of social cost in patients with hypertension and ADD. **CONCLUSIONS:** Bariatric surgery led to reductions of obesity-related comorbidities. One year after, the economic burden is mainly sustained by patients, their families and the productivity system.

**PSY41**

**COST OF ILLNESS ANALYSIS OF DUCHENNE MUSCULAR DYSTROPHY IN ITALY**

Fabriani V, Marcellusi A, Mennini FS, Giannantoni P

*University of Rome "Tor Vergata", Rome, Italy*

**OBJECTIVES:** The objective of this study is to estimate the average annual direct and indirect costs associated with Duchenne muscular dystrophy (DMD) in Italy considering both National Health System (NHS) societal perspective. **METHODS:** A probabilistic prevalence-based cost of illness model was used to estimate the economic impact of a rare disease as DMD. All the costs were determined through a survey that families registered with the Muscular Dystrophy Association "Parent Project onlus" completed on-line. NHS and family prospective has been analyzed dividing the patients into three age groups (<8, 8 – 16 and >16). Human capital approach was used to determine loss of productivity due to absenteeism, while the bottom up approach was used to calculate direct costs. Furthermore, a probabilistic sensitivity analysis with 5,000 Monte Carlo simulations was performed, in order to test the robustness of results and define the 95%CI. **RESULTS:** Indirect costs are those that weigh more on the total expenditure of the NHS with €474.634.836 (95%CI: € 300.028.168 - € 698.965.090) per year, while the direct health care costs are € 7.475.596 (95%CI: €5.124.369,29 - €10.263.785) and nonmedical costs are € 12.944.879 (95% CI: €7.925.699 - €19.175.331). Patients with more than 16 years spend more than those between 0 and 7 years old, and even more than those between 8 and 15. For what concern the private expenditure, the model estimated €2.910.506 (95%CI: €345.231,83 - €718.786) for the direct costs, and €185.333.744 (95%CI: €114.177.282 - €273.446.219) for the nonmedical costs. **CONCLUSIONS:** Although DMD is a rare disease, its economic impact on NHS is quite remarkable. Furthermore, the most of the impact relies on families and society.

**PSY42**

**THE BURDEN OF MYELOFIBROSIS IN GREECE**

Kousoulakou H[1], Symeonidis A[2], Kyriakou D[3], Sotiropoulos D[4], Gigantes S[5], Delimbasi S[5], Tsirigotis P[6], Hatzikou M[7], Geitona M[1]

[1]*University of Peloponnese, Corinth, Greece,* [2]*University of Patras Medical School, Patras, Greece,* [3]*University Hospital of Larissa, Larissa, Greece,* [4]*G. Papanicolaou Hospital, Thessaloniki, Greece,* [5]*Evangelismos Hospital, Athens, Greece,* [6]*Attikon Hospital, Chaidari, Greece,* [7]*Novartis Hellas, Metamorfosis, Greece*

**OBJECTIVES:** To estimate the burden of myelofibrosis (MF) in Greece, focusing on epidemiological data, quality of life (QoL), direct and indirect costs. **METHODS:** A 17-page questionnaire was developed, validated, and completed with the Delphi technique. It included questions on epidemiological, resource use, QoL and socio-economic data. An expert panel with 9 KOL haematologists was convened consisting of experts from the largest Haematology Units of Greece, covering geographically six out of seven Regional Health Authorities. Unit costs in 2014 prices were taken from officially published sources. The societal perspective was adopted. **RESULTS:** Prevalence and incidence rates of MF in Greece are approx. 2.5: 100,000 and 0.7: 100,000 people respectively, corresponding to approx. 270 patients (71.7% with primary and 28.3% with secondary) and 76 new cases every year; 92% of the patients present with splenomegaly at diagnosis, 1/3 of which reduce their daily activities. Current treatment options in Greece are ruxolitinib and best supportive care (BSC). 72.6% of the primary and 65% of the secondary MF patients treated with ruxolitinib show improvement of splenomegaly vs. 23% and 7%, respectively for patients treated with BSC. Ruxolitinib patients show QoL improvement and less splenectomies (<1%) compared with BSC patients (~3%). Work loss days associated with ruxolitinib are estimated at 23 days per year (51 days for BSC), and 20% of them return to work after treatment (5% for BSC). The annual direct cost of managing all MF patients in Greece is estimated at €1.65 million, including pharmaceutical, hospital, follow-up costs, blood transfusions, and management of infections. Productivity losses are estimated at €217,975 per year, resulting in a total annual burden of approx. €1.87 million. **CONCLUSIONS:** MF is associated with significant burden to patients, their families, and to the society. Treatment with ruxolitinib appears to improve patients' QoL and reduce indirect costs, mainly through reduction of splenomegaly and splenectomies.

**PSY43**

**THE INDIRECT COSTS OF MULTIPLE SCLEROSIS ASSOCIATED WITH ABSENTEEISM IN POLAND**

Mocko P[1], Kawalec P[2]

[1]*Jagiellonaian University Medical College, Krakow, Poland,* [2]*Jagiellonian University Medical College, Krakow, Poland*